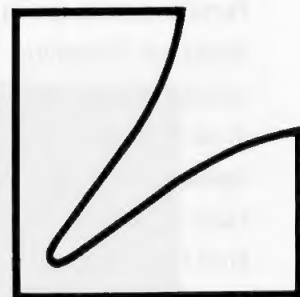


# SERVICE MANUAL

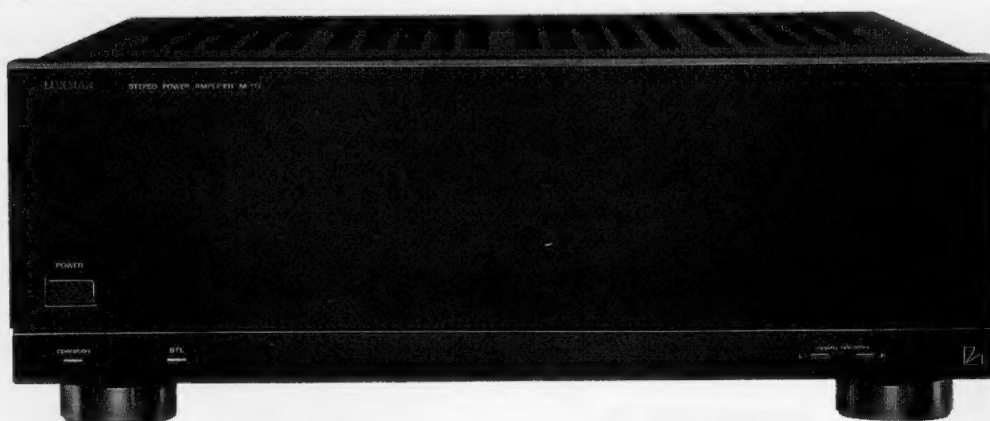


Stereo Integrated Amplifier

## M-117

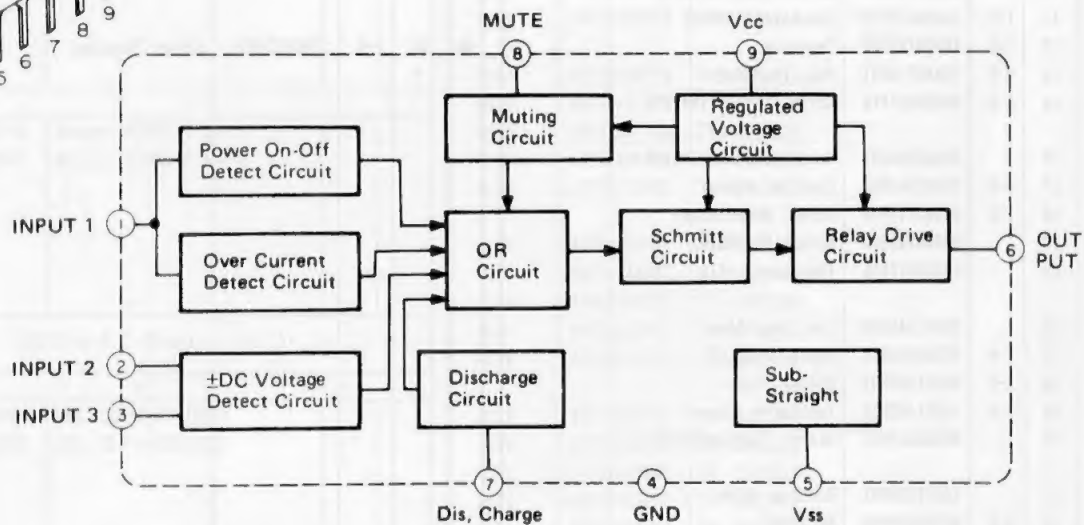
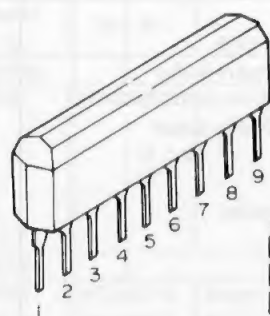
### — REVISED —

- Serial Numbers after  
No.81210651—A for M-117 (North American) model
- Concerning the contents not to be given in this manual,  
refer to the service manual (68P92578F02)

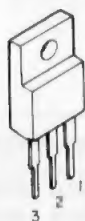


## Semi-Conductor Lead Identifications

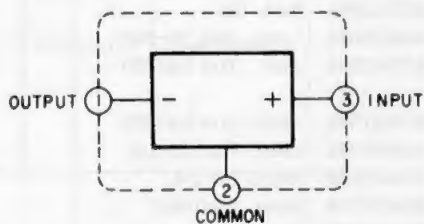
TA7317P: IC301



NJM78M12A: IC302

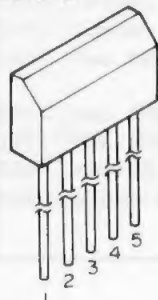


1. Output
2. Common
3. Input



2SA995 :Q101,201

2SC2291:Q102,202



1. Emitter 1
2. Collector 1
3. Base (Common)
4. Collector 2
5. Emitter 2

2SA1208:Q103,104,203,204



1. Emitter
2. Collector
3. Base

#### 4. Removal of Main-Amp(R) P.C. Board

- (1) After removal of Heatsink(R) remove twenty two screws marked " \* " as shown in Figure 6.

NOTE: Take care of handling each transistors when removing the Main-Amp(R) P.C. Board.

#### 5. Removal of Heatsink(L) and Main-Amp(L) P.C. Board

- (1) Remove in the same way above mentioned.

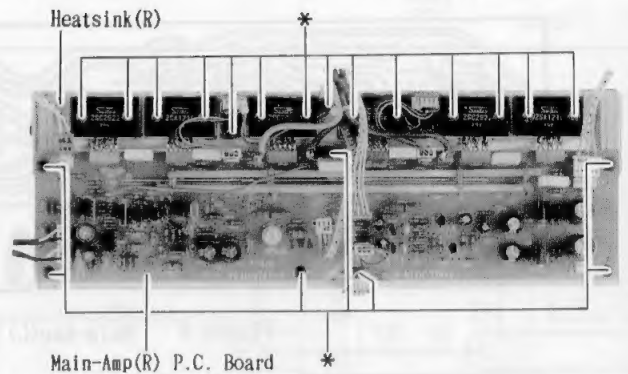


Figure 6

## Adjustment Procedures

### 1. Connection

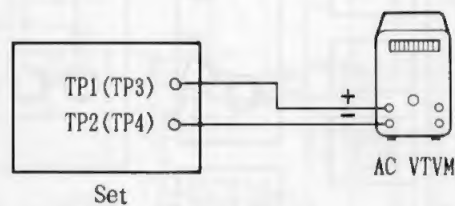


Figure 7

### 2. Control Setting

Attenuator(Left).....	Minimum	Power Switch .....	ON
Attenuator(Right) .....	Minimum	Others .....	OFF

### 3. Adjustment Procedure

- (1) Idling Adjustment(Figure 7.8 and 9)

Adjust VR101(VR201) so that voltage between TP1(TP3) and TP2(TP4) reaches  $4 \pm 0.5\text{mV}$

## Adjustment Locations

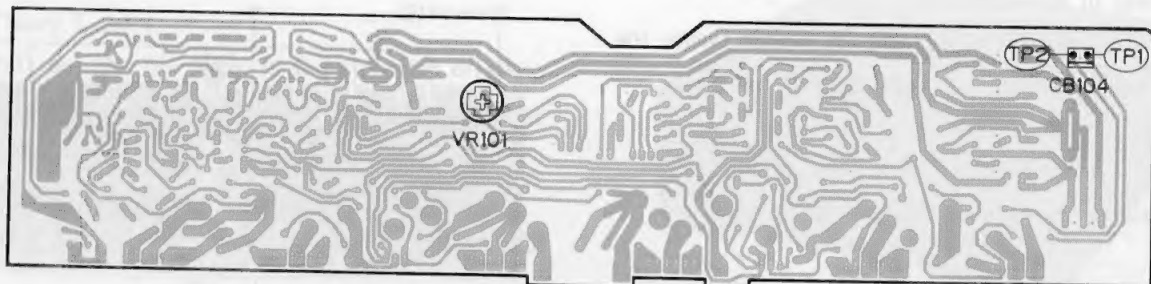


Figure 8 Main-Amp(L) P.C. Board (Component Side)

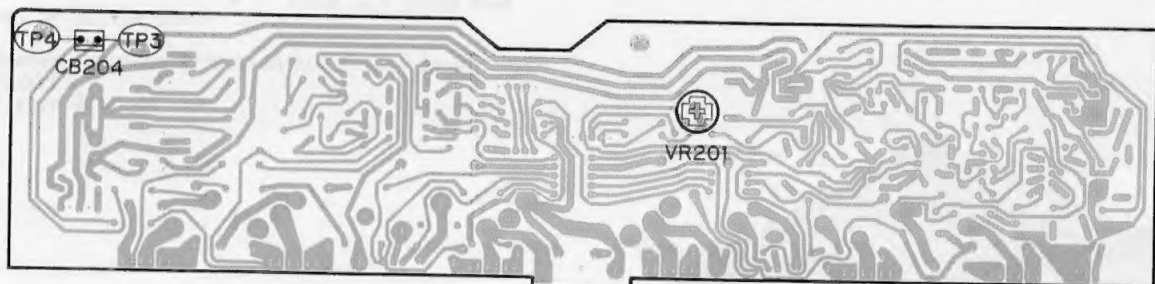
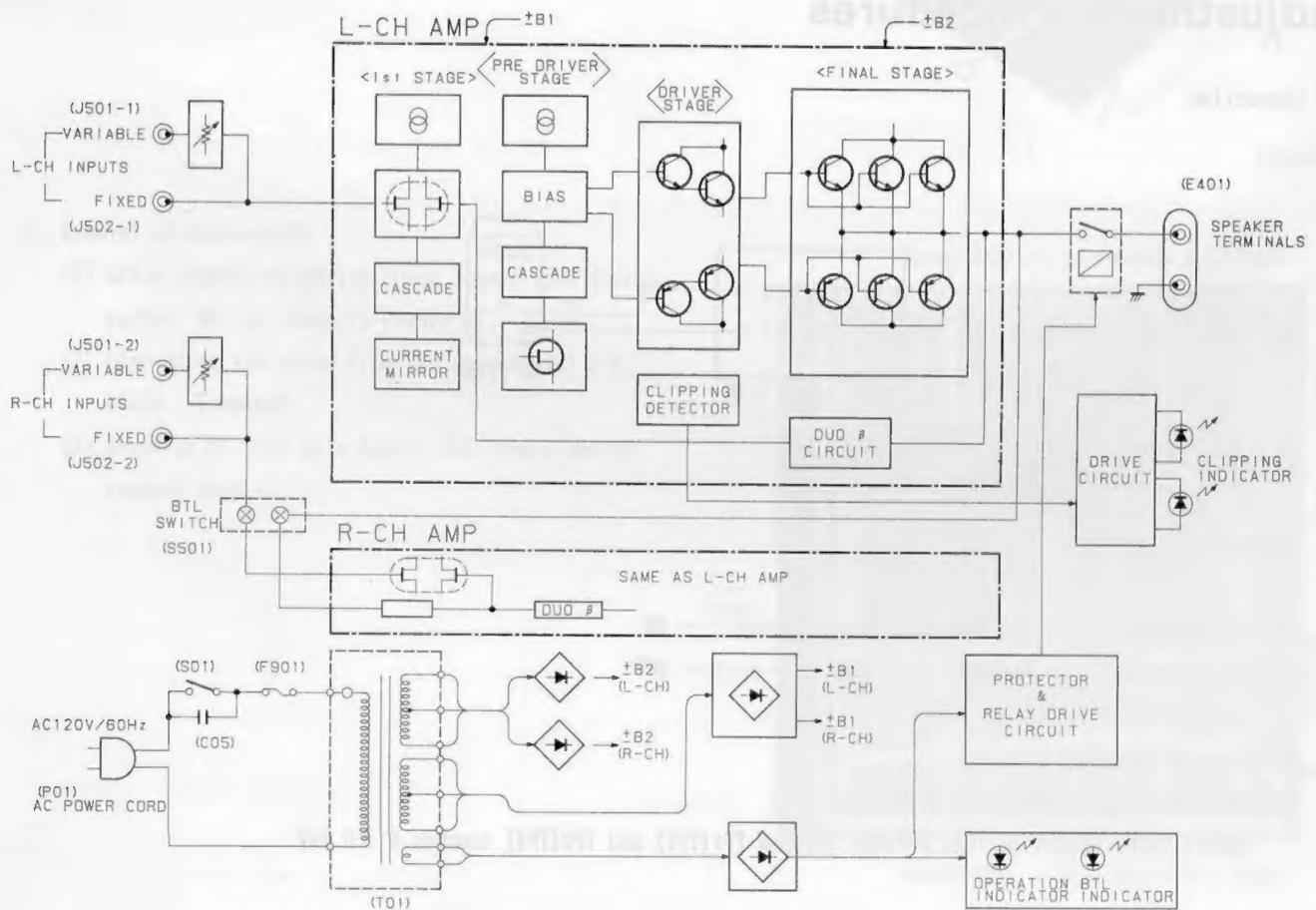


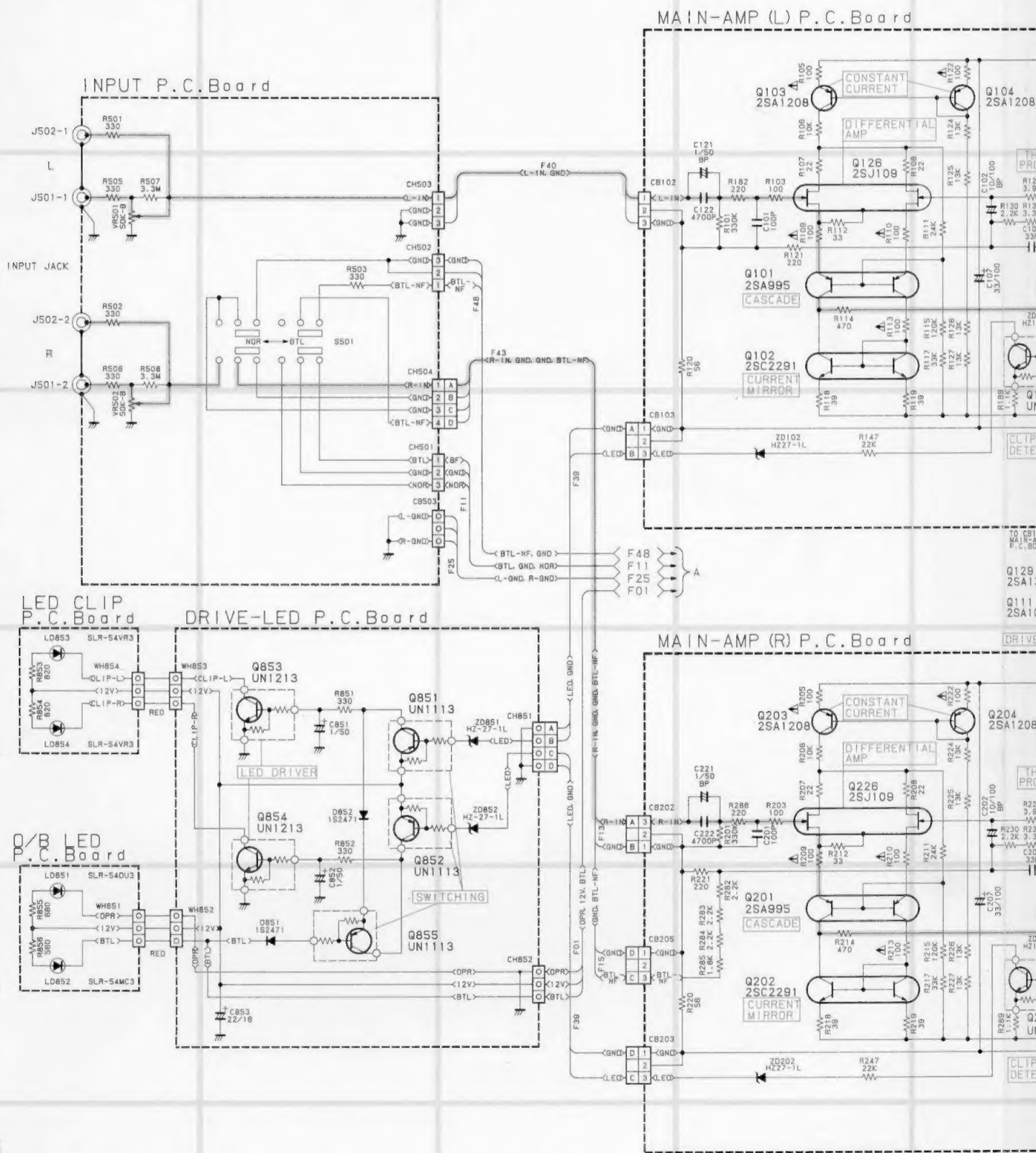
Figure 9 Main-Amp(R) P.C. Board (Component Side)

## Block Diagram



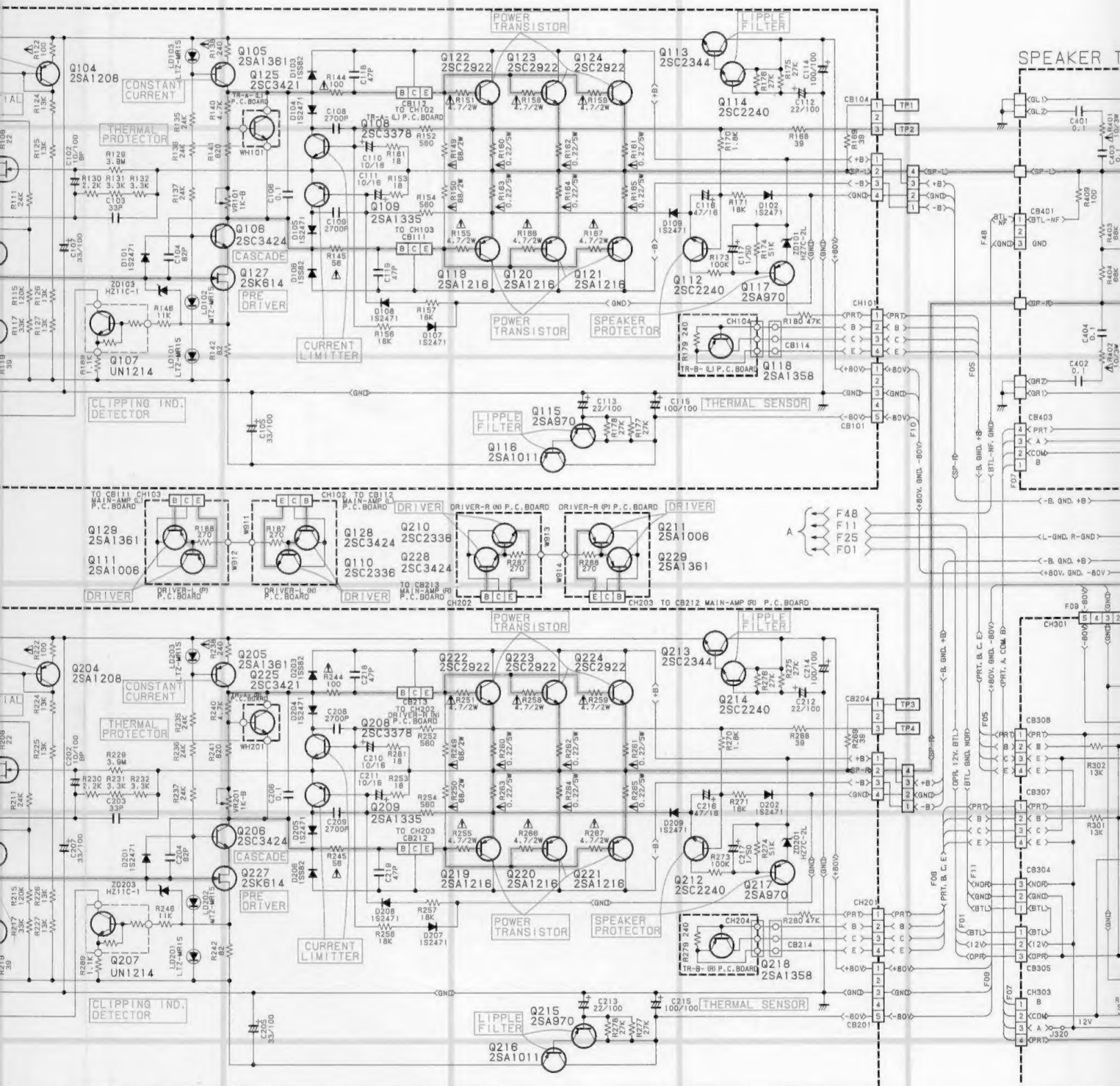
# Schematic Diagram

IC										
Transistors (Q)										
	Q853	Q854	Q855	Q851	Q852	Q103	Q101	Q102	Q203	Q201
	Q854	Q855		Q852		Q202	Q126	Q228	Q104	Q107
									Q204	Q107
										Q207





Q104	Q105	Q108	Q122	Q123	Q124	Q113	Q114
Q204	Q107	Q109	Q119	Q120	Q121	Q211	Q112
	Q111	Q125	Q115	Q116	Q229	Q118	Q117
	Q205	Q208	Q210	Q223		Q213	Q214
	Q206	Q209	Q228	Q222	Q224	Q212	Q218
	Q227		Q219	Q216	Q221		Q217



IC301

IC302

## NOTES:

1. All resistance values are in ohms, K=1,000  
 2. All capacitance values are in microfarads, P=  $\frac{1}{1,000,000}$

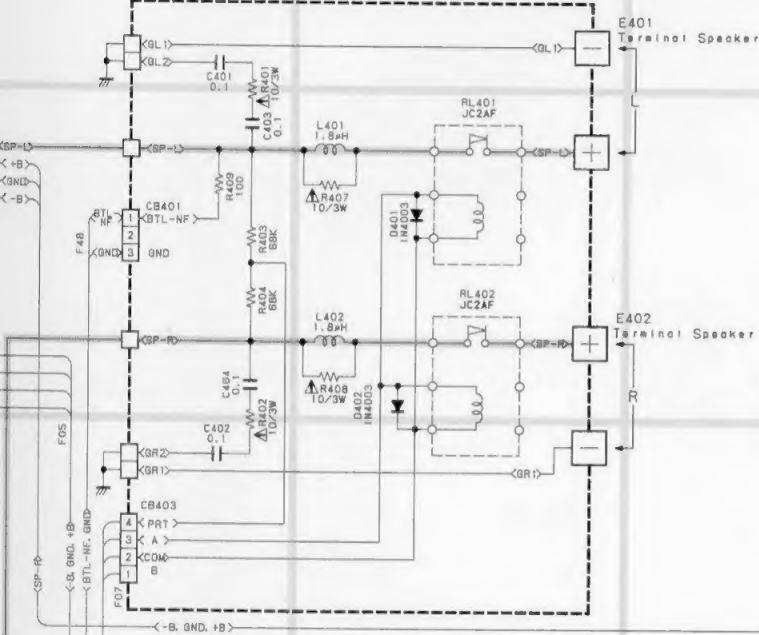
## Voltage Measuring Conditions

- Power Supply Voltage: AC 120V
- Measuring Meter: Digital Volt Meter
- Measuring point reference: Between Ground
- Measuring conditions: No Signal Input

## Terminal Voltage

	1	2	3	4	5	6	7	8	9
IC301	-0.5V	0V	0V	0V	-0.7V	1.9V	0V	1.2V	2.7V
IC302	12.1V	0V	17V						

## SPEAKER TERMINAL P.C.Board



L

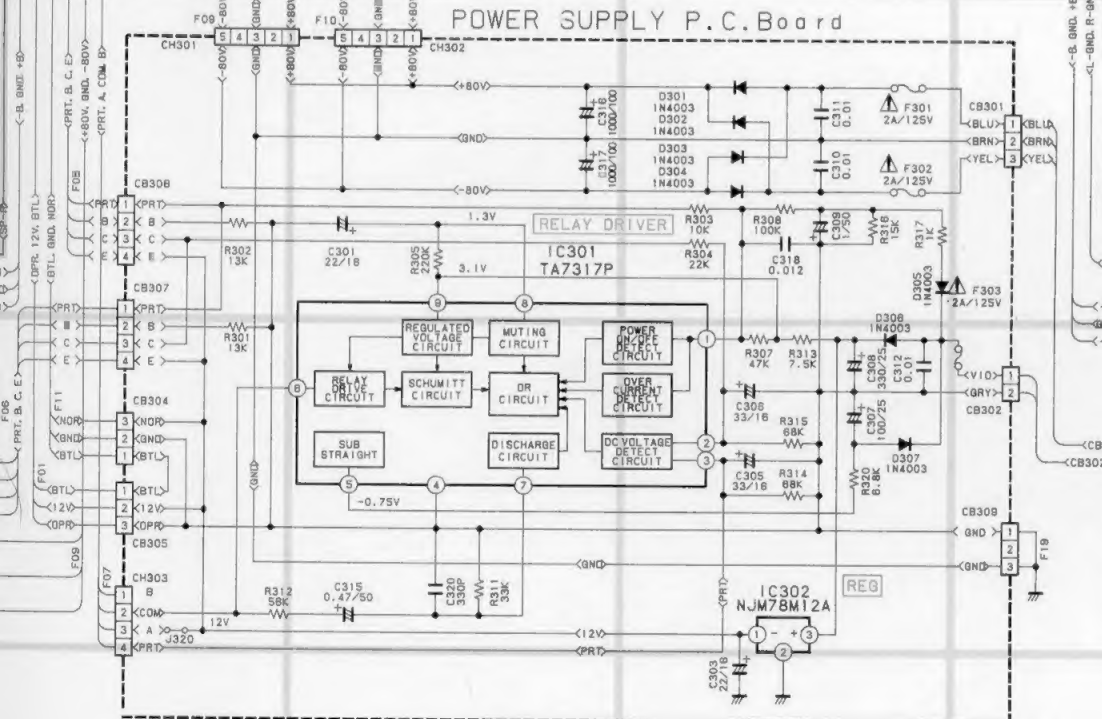
R

	E	C	B
Q101	-10.85V -10.86V	-79.2V	-11.35V
Q102	-81.5V	-79.2V -80.9V	-80.9V
Q103	81.2V	34.1V	80.7V
Q104	81.4V	80.7V	80.7V
Q105	80.1V	1.83V	79.5V
Q106	-78.6V	-1.84V	-78V
Q107	-81.5V	-43.5V	-81.2V
Q108	0V	1.9V	0V
Q109	0V	-1.9V	0V
Q110	0.8V	79V	1.2V
Q111	-0.6V	-79V	-1.2V
Q112	-0.2V	80.5V	0V
Q113	81.6V	82.8V	82.2V
Q114	82.2V	82.8V	82.7V
Q115	-82.2V	-82.8V	-82.7V
Q116	-81.6V	-82.8V	-82.2V
Q117	74.2V	-0.54V	81.2V
Q118	12.1V	0V	11.9V
Q119		-79V	
Q120		-79V	
Q121		-79V	
Q122		79V	
Q123		79V	
Q124		79V	
Q125	-1.84V	1.83V	1.26V
Q126	1.2V	79V	1.8V
Q129	-1.2V	-79V	-1.8V

	S	D	G
Q126	-0.44V	-10.7V	0V
Q127	-78.6V	-81.2V	-79V
Q226	-0.44V	-10.7V	0V
Q227	-78.6V	-81.2V	-79V

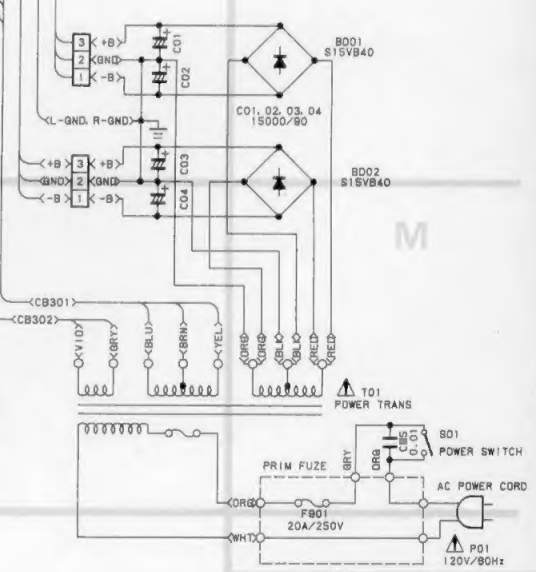
	E	C	B
Q851	12V	0V	12V
Q852	12V	0V	12V
Q853	0V	12V	0V
Q854	0V	12V	0V
Q855	0V	0V	12V

## POWER SUPPLY P.C.Board



## CAUTION:

The  $\Delta$  mark, the symbol NO. in a box in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.



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